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EXAMINER

KIM, EUNHEE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

1. The amendment filed 05/19/2010 has been received and considered. Claims 36, 40-41, and 44 are presented for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 40-41 and 44 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Faruque et al. (U.S. Pub. No 2003/0149500), in view of Hazama et al. (U.S. Patent No. 6,212,441).

As per claim 44, Faruque et al. teaches a continuous loop data library for refining the design of a white body model from the beginning of a design process to the end of a design process during the creation of a simulated white body model of a mechanical assembly (Abstract, Fig. 1, [0027])comprising:

a central library database that updates itself with the inclusion of a new record of a simulated mechanical assembly upon the completion of an evaluation of that mechanical assembly (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], [0041], [0052]), the library including a menu selectable list of data records for parts, CAD data, mesh data, parts connection data, parts assembly data, stock parts data, and assembly evaluation data, all associated with a predetermined assembly (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);

individual sources of simulation model information related to the discrete categories of design, assembly and simulation characteristics of a predetermined white body, the information sources separately accessible to distinct design, assembly and simulation testing groups of an enterprise wherein members of each group are separately associated, respectively, with the design, assembly and simulation functions of the enterprise involved in the development of a

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mechanical assembly (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);

a work stations, each work station located at a distance apart from the library database, the work stations interconnected with the library in a spoke network with respect to a central library hub wherein the work stations are uniquely accessible by individual members of separate design, assembly and simulation groups involved, respectively, with the design, assembly and simulation testing responsibilities of the white body model under development (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);

a menu allowing members of the enterprise design, assembly and simulation testing task groups to select data files related to a predetermined mechanical assembly that is to be evaluated (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);

the menu accessible at each work station and restricting a task force member's access to the library in accordance with a member's association with one of a design, assembly or simulation group function in the enterprise, the menu having categories (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]) comprising: 1) selecting parts and retrieving the data files associated with the selected parts (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); 2) associating the selected parts and the characteristics of the parts selected with the mechanical assembly to provide a model (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); 3) selecting a connection for associating parts to be joined with each other from the library (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); 4) retrieving data files from the library associated with the connection (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and

[0041]-[0043]); 5) associating the characteristics of the connection selected with the selected parts (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]); 6) processing the associated connection and parts through a mesh process to provide an assembly mesh (Fig. 4E); 7) saving data associated with the assembly mesh in a database (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); 8) building a white body model (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); 9) translating the model into a data record (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); 10) performing a virtual simulation of the model comprising one or more of crash impact, durability and noise (Fig. 1-4E, Paragraph [0021], [0025], [0033]); 11) recording a data record of the result of the simulation (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); 12) returning the data record of the model and the result of the virtual simulation of the model to the library (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); and 13) upon the completion of a virtual simulation of the white body model, replacing any prior record in the library of the mechanical assembly model simulated with a record of the model created and the simulation result of the model processed (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);

whereby a) successive data files of simulation white body model assemblies evaluated replace previous versions of simulated model assemblies maintained in the library (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043], [0048]-[0052]); b) the data files are preserved in a continuous loop sequence as refinements are made to the simulated mechanical assembly model (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043], [0048]-[0052]); and c) the data files of the simulated mechanical assembly model

are maintained in the library database such that the data files are accessible for subsequent use upon selection by a member of a task group (Fig. 1-4E, Paragraph [0021], [0025], [0033]).

Faruque et al. fails to teach explicitly a plurality of workstations.

Hazama et al. teaches a plurality of workstations (Fig. 1).

Faruque et al. and Hazama et al. are analogous art because they are both related to a method of a design system.

Therefore, it would have been obvious to one of ordinary skill in the art of at the time the invention was made to include a plurality of workstations of Hazama et al., in the method of interactively assembling a model of Faruque et al. because the a plurality of workstations is a well known process for a ordinary skilled artisan in a method of interactively assembling a model. Hazama et al. teaches an advantageous system that provides central stored the design and the job so they can be easily accessed and retrieved from any area in the factory (Col. 4 lines 9-35).

As per claim 40, Faruque et al. teaches wherein, in the process of building the white body model and associating mesh and connection data relating to the manner in which conjoined parts are joined in the assembly, imperfections in the mesh, are identified and fixed before a virtual simulation of the model is performed (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]).

As per claim 41, Faruque et al. teaches wherein, upon the approval of the results of a white body model simulation by the task group, the assembly simulated is fixed as a final design in the library (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]).

4. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faruque et al. (U.S. Pub. No 2003/0149500), in view of Hazama et al. (U.S. Patent No. 6,212,441).

Faruque et al. as modified by Hazama et al. teaches most all of the instant invention as applied to claims 40-41 and 44 above.

Faruque et al. as modified by Hazama et al. teaches selectable data files in the library database list include connections comprising welds, bonds, bolts, and pin joints (Faruque et al. : [0043]).

However, Faruque et al. as modified by Hazama et al. fails to explicitly teach sealers, adhesives, and ball joints.

It was known at the time the invention was made that various types of connecting means include sealers, adhesives, and ball joints for system of interactively assembling a model. At the time the invention was made, it would have been obvious to one of ordinary skill in the art of technology of modeling and virtual evaluation system for mechanical assemblies to various types of connecting means including sealers, adhesives, and ball joints. The motivation would have been to ensure the quality and consistency of the assembled mesh model, which results in improved the analysis (Faruque et al.: Paragraph [0035]).

Therefore it would have been obvious to modify Faruque et al. as modified by Hazama et al. to obtain the invention as specified in claim 36.

Response to Arguments

5. Applicant's arguments filed 05/19/2010 have been fully considered but they are not persuasive.

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Applicants have argued that:

Faruque does not mention the words "noise" or "durability." Faruque does not disclose testing or evaluations as to durability and noise. One skilled in the art would recognize the unique features of the present invention and would not have thought the present invention obvious in light of Faruque or Faruque combined with any of the other art cited. In view of the novel features of claim 44, and in that all the remaining claims depend on claim 44, it is respectfully submitted that this application is patentably distinguishable over the cited art.

Examiner agrees. However, Claim recites the limitation "performing a virtual simulation of the model comprising one or more of crash impact, durability and noise". Thus it is

Examiner's position that Faruque teaches the cited limitation as Faruque teaches crash modes ([0021] and [0025]) including front impact, side impact, rear impact and roof crush ([0021]).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUNHEE KIM whose telephone number is (571)272-2164. The examiner can normally be reached on 8:30am-5:00pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Eunhee Kim/
Examiner, Art Unit 2123

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123